

ABSTRACT OF THE DISCLOSURE

Radial dynamic pressure grooves are provided in a first region 4A and a second region 4B on the side of a fixed shaft 2. A vent 2D is provided inside the top end 2A of the fixed shaft 2. The vent 2D connects spaces over and under a flange 3 to each other. The flange 3 in an annular shape is fixed at the top end 2A of the fixed shaft 2. Thrust dynamic pressure grooves 3A and 3B are provided on the surfaces of the flange 3. A circulation hole 3C is provided in the flange 3, and connects spaces over and under the flange 3 to each other. A sleeve 4 revolves around the fixed shaft 2. A thrust plate 6 in an annular shape is fixed at the top of the sleeve 4 and opposed to the flange 3. The first region 4A, the second region 4B, the thrust dynamic pressure grooves 3A and 3B, and the circulation hole 3C of the flange 3 are filled with a lubricant 7. At the revolution of the sleeve 4, the lubricant 7 is concentrated in each central part of the first region 4A, the second region 4B, and the thrust dynamic pressure grooves 3A and 3B and their vicinities, then raising the pressure. The sleeve 4 keeps its stable high-speed revolution, avoiding contact with the fixed shaft 2. The lubricant 7 circulates on surfaces of the flange 3 through the circulation hole 3C.